

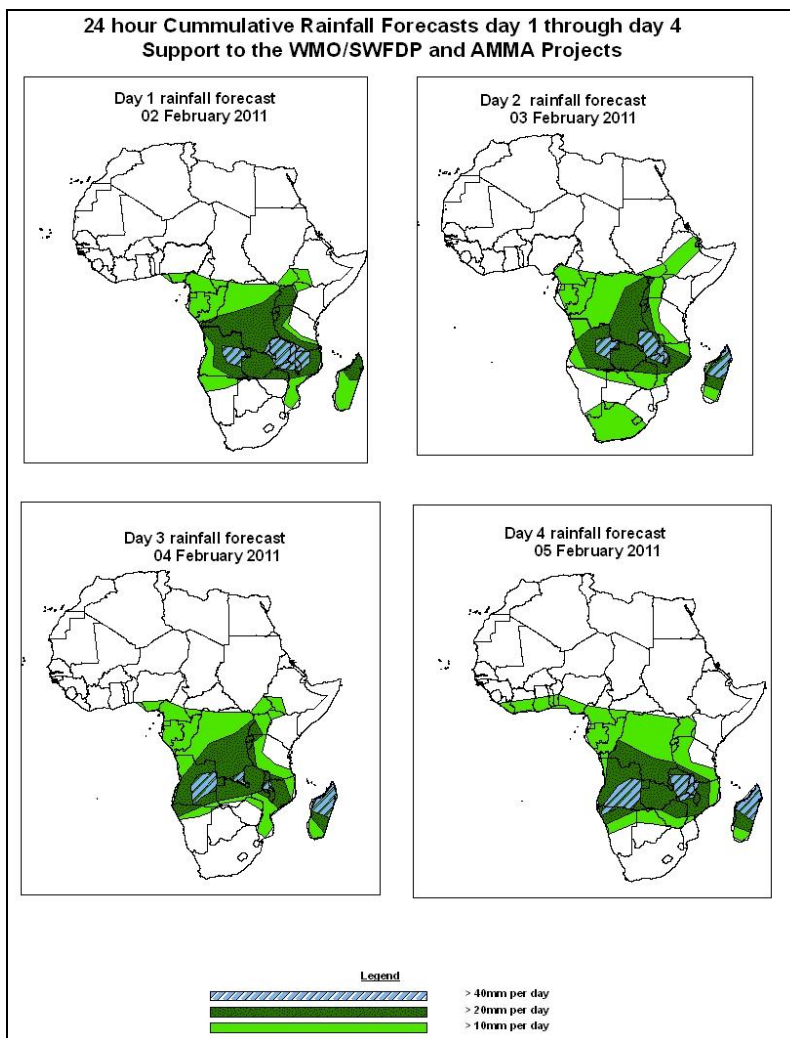


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid, 06Z of 02 February – 06Z of 05 February 2011, (Issued at 14:00Z of 31 January 2011)

1.1. Twenty Four Hour Cumulative Rainfall Forecasts

The forecasts are expressed in terms of probability of precipitation (POP) exceeded based on the NCEP, UK Met Office and the ECMWF NWP outputs, the NCEP global ensemble forecasts system (GEFS) and expert assessment.



Summary

In the coming four days, strong lower level convergences across central and southern African countries, westward propagating mid-latitude trough across northeast Africa, and the cyclonic circulation in the vicinity of Mozambique Channel are expected to enhance rainfall in their respective regions. Hence, there is an increased chance for rainfall to exceed 20mm per day over Madagascar, Zambia, Mozambique, Botswana, Angola and DRC.

1.2. Models Comparison and Discussion-Valid from 00Z of 01 February 2011

According to the GFS, ECMWF and UKMET models a series of cut off lows over the southern parts of the Gulf of Guinea, parts of central African region and southern Sudan are expected to form an east-west oriented trough. In the coming four days, this trough is expected to deepen in its eastern end (near southern Sudan), while the trough is expected to fill up along its western end, as a result of strengthening of a ridge from the Azores high. On the other hand, lows associated with the meridional arm of the ITCZ are also expected to persist in the area extending between central DRC and western Namibia. A low pressure system in the vicinity of Mozambique Channel and Madagascar is expected to maintain its position, while slightly deepening. In general, similar pressure patterns are depicted by the GFS and UKMO models, while the ECMWF model tends to indicate weaker low pressure values than the GFS and UKMO models do.

According to the GFS, ECMWF and UKMET models, St. Helena High pressure system over southeast Atlantic Ocean is expected to intensify gradually through 24 to 96 hours, with its central pressure value changing from 1020 to 1024mb through 24 to 48 hours while shifting to the east across South Africa. Similarly, the Mascarene high pressure system over southwest Indian Ocean is expected to intensify through 24 to 96 hours with its ridge extending north to the latitudes of southern Tanzania.

At 850hPa level, the GFS model indicates east-west oriented convergence line in the region between the coastal areas of the Gulf of Guinea and northeast DRC. The convergence line is expected to weaken along its west end, while it remains strong along its eastern end through 24 to 96 hours. A north-south oriented convergence line is also expected to dominate the flow across Uganda, western Tanzania and Malawi through 24 to 96 hours. Another convergence line is expected in the region extending from western Angola to western Namibia, while localized cyclonic is expected to extend into South Africa. The cyclonic circulation near Madagascar is expected to maintain its position while strengthening through 24 to 96 hours.

At 700hPa level, the axis of a mid-latitude trough is expected to shift between 38° to 42° longitudes, with its southern tip reaching the latitudes of northern Sudan and northern Ethiopia through 24 to 48 hours and to move further to the east after 48 hours. A strong lower tropospheric convergence is expected to dominate the flow over Angola,

Zambia, DRC and Zambia, through 24 to 96 hours. The cyclonic circulation in the Mozambique Channel is expected to intensify through 24 to 96 hours.

At 200hPa, zone of strong wind (>50Kts) associated with the Sub Tropical westerly Jet in the sub-tropical region of northern Africa is expected to attain a wavy pattern through 24 to 96 hours. However, the maximum wind speed associated with jet is expected to decrease (to values of below 130kts) in the next 48 hours.

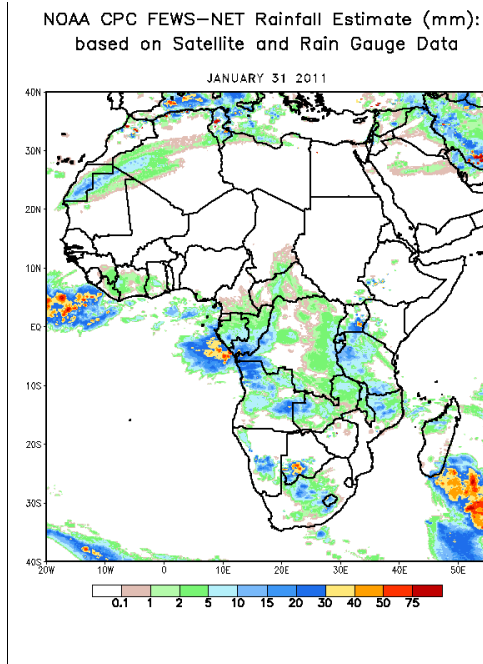
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2.0. Previous and Current Day Weather Discussion over Africa (31 January 2011 – 01 February 2011)

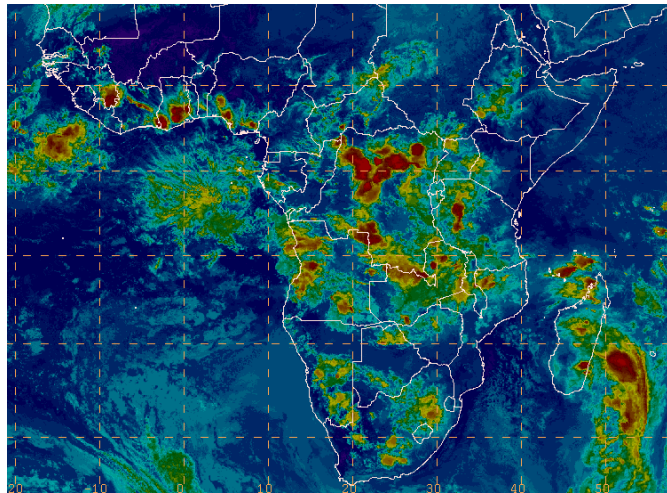
2.1. Weather assessment for the previous day (31 January 2011):

During the previous day, light to moderate rainfall was observed over Gabon, Congo, parts of DRC, Uganda, Zambia, Tanzania, Angola, and parts of South Africa.

2.2. Weather assessment for the current day (01 February 2011): Intense clouds are observed over southern parts of the Gulf of Guinea countries, DRC, Uganda, western parts of Tanzania, Zambia, Malawi, northern Mozambique, South Africa, Madagascar and Angola.



IR Satellite Image, Valid 1930Z, February 1, 2011



*Previous day rainfall condition over Africa (Left)
based on the NCEP CPCE/RFE and current day
cloud cover (top) based on IR Satellite image*

Disclaimer: *This bulletin is for training purposes only and should be used as guidance. NOAA does not make forecasts for areas outside of the United States.*